

### REMARKS

This application, as amended herein, contains claims 1-35, 37-40, 42-45, 47-54 and newly added claim 55 and 56. Claims 36, 41, and 46 have been canceled.

Claims 1-14 and 17-34 were rejected as being obvious over Smith in view of Barry. Claims 15 and 16 were rejected as being obvious over Smith in view of Barry in further view of Swildens et al. These rejections are respectfully traversed.

Applicants' invention, as set forth in claim 1, as amended herein, is directed to a method distributing at least one application in a communication network. The method comprising the steps of redirecting to one server of a plurality of proxy servers at locations distributed throughout the network, at least one service request received from a client for said at least one application; determining a set of programs required at said one server to fulfil said request for said at least one application; and executing said set of programs. Claim 1 also recites providing administrative control of said application with a backend server; and selecting said one server to be closer to a client requesting a service provided by said application than said backend server.

Thus, Applicants' invention, as set forth in claim 1, as amended herein, provides the advantage of distributing an application that may be requested by client to a plurality of proxy servers located throughout the network.

A set of programs required to fulfil the application is determined. The set of programs is then executed. However, while a backend server provides administrative control, a server at a location closer to the client services the client. Thus, even though the backend server may be located at a greater distance from the client, since it is providing administrative control, the bulk of the application programs are run on a closer processor, and latency performance is enhanced.

Applicants' invention, as set forth in claim 1, has the advantage of the programs being executed at any one of the plurality of servers. Advantageously, the proxy server executing the application may be positioned so as to greatly decreased latency time for the application to provide the service desired by the client. Neither Smith nor Barry teach or suggest such an advantageous arrangement. In Smith, all the proxy servers tend to be in close proximity to one another. This also is the case for Barry. Neither Smith nor Barry teach or suggest that the proxy servers may be distributed throughout the network so that one that is particularly convenient to the client in terms of assuring prompt service, is used to service that client. In view of the above, it is respectfully submitted that claim 1 is directed to patentable subject matter.

Independent apparatus claims 15, 17 and 18, and independent method claim 21 have been amended in a manner analogous to the amendment to claim 1. For the reasons set forth above with respect to claim 1, it is respectfully

submitted that claims 15, 17, 18 and 21 are also directed to patentable subject matter.

Claim 35, which depends from claim 1, recites the further step of selecting the one server to be closer to a client requesting a service provided by the application, than other of the plurality of proxy servers. Claim 35, and analogous claims 40 and 45, which depend from independent claims 15 and 21, respectively, specifically provide the advantage of reduced latency, as noted above with respect to claim 1. Thus, it is respectfully submitted that claims 35, 40 and 45 are directed to patentable subject matter.

Claim 37, depends from claim 1 and recites that the method further comprising storing at least a portion of the programs on each of the proxy servers. This provides excellent latency performance. It is counter-intuitive with respect to what is taught in Smith, where it is suggested that such duplicate storage represents undue system overhead (Smith, column 1, lines 25-29). Thus, it is submitted that claim 37, and analogous claims 42 and 47, which depend from independent claims 15 and 21 respectively, are also directed to patentable subject matter.

Claim 38, which depends from claim 1, recites that the backend server is in communication with each of the proxy servers for administrative control of each of the proxy servers. The advantages of this approach are set forth above with respect to claim 1. It is also noted that in

accordance with claim 38, administrative control thus need not be duplicated at each of the proxy servers. Thus, it is submitted that claim 38, and analogous claims 43 and 48, which depend from independent claims 15 and 21 respectively, are also directed to patentable subject matter.

Claim 39, which depends from claim 1, recites providing a backend server in communication with the client for providing services for portions of the application that are not readily distributable to the proxy servers. Thus, the application is advantageously split between those provided by the proxy with low latency, and those provided by the backend server, possibly with higher latency. This approach tends to optimize system performance, while minimizing overhead. It is submitted that claim 39, and analogous claims 44 and 49, which depend from independent claims 15 and 21 respectively, are also directed to patentable subject matter.

Independent claim 17 recites a plurality of proxy servers each having a first set of programs used in the at least one application and a second set of programs retrieved from a backend server and executed locally to satisfy part of at least one request received from a client. Thus, Applicants' invention, as set forth in claim 17, advantageously has portions of the application on each of the proxy servers distributed throughout the network, and retrieves the other portions when necessary from the backend server. These elements, in combination with the other elements of claim 17, are not rendered obvious by any

combination of Smith and Barry. As noted above, Smith specifically teaches away from duplication on a servers because of the additional incurred overhead. In view of the above, it is respectfully submitted that claim 17 is directed to patentable subject matter.

In a similar manner, claim 18 recites a first set of programs used for at least one application and distributed to a plurality of proxy servers within the network, and a second set of programs used for said at least one application and executed locally by the backend server. Claim 18 is not rendered obvious by Smith or Barry or any combination thereof. It is therefore respectfully submitted that claim 18 is also directed to patentable subject matter.

Claims 50-53 (which depend ultimately from claim 10), and newly added claim 54 (which depends from claim 28) are directed to the structure of the proxylet-record. It is submitted that the prior art does not teach or suggest such a structure.

Newly added claims 55 and 56 serve to further distinguish Applicants' invention from the prior art. Claim 55 positively recites that latency in the communication network is reduced. Further, claim 56 states that dynamically generated content is cached at the proxy servers. Support for claim 56 may be found at page 2, lines 26 - 29, and throughout the specification. It is stated in the last paragraph of page 2 of the specification that such data could not be readily cached at the proxies.

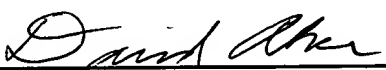
However, the present invention solves this problem. Thus, it is respectfully submitted that claims 55 and 56 are directed to patentable subject matter.

The remaining claims depend from one of the independent claims discussed above. These claims recite further elements, which in combination with the elements from which they depend, are not disclosed or suggested in the art of record. For the reasons set forth above with respect to the independent claim from which they depend, it is submitted that these claims are also directed to patentable subject matter.

The Examiner is invited to contact the undersigned to resolve any remaining issues.

A request for an extension of time of two months for the filing of this paper is respectfully requested. A check in the amount of \$450 to cover the required fee is submitted herewith, as note on the attached RCE transmittal.

Respectfully submitted,

  
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